We claim:

1   1.   A method of regulating an average rate of transmission on a computer network

2   employing TCP, comprising the steps of:

3   determining an amount of available space in a receive buffer; and

4   removing data from the receive buffer such that the amount of available

5   space in the receive buffer is maintained at a regulated value.

1   2.   The method of claim 1, wherein the step of removing data includes regulating the

2   frequency at which data is read from the receive buffer.

1   3.   The method of claim 1, wherein the step of removing data includes regulating the

2   amount of data read during each read from the receive buffer.

1   4.   The method of claim 1, wherein a receiver measures an actual transfer rate.

1   5.   The method of claim 1, wherein the step of determining an amount of available

2   space in a receive buffer is performed by a rate control module located on a

3   receiver.

1   6.   The method of claim 5, wherein the rate control module operates above a TCP

2   layer and communicates with the TCP layer via a TCP application programming

3   interface.

1   7.   The method of claim 1, wherein the average rate of transmission is regulated to an

2   extent sufficient to reduce the effect that a transmission has on another

3   transmission in the computer network.

1   8.   The method of claim 1, wherein the step of removing data uses a determined

2   frequency of lost packets.

1   9.   A method of regulating an average rate of transmission on a computer network

2   employing TCP, comprising the steps of:

3   determining an amount of available space in a receive buffer; and

4   regulating an available space in the receive buffer by regulating a size of

5   the receive buffer.

1   10.   The method of claim 9, wherein a receiver determines an actual transfer rate.

1   11.   The method of claim 9, wherein the step of determining an amount of available

2   space in a receive buffer is performed by a rate control module located on a

3   receiver.

1   12.   The method of claim 11, wherein the rate control module operates above a TCP

2   layer and communicates with the TCP layer via a standard TCP application

3   programming interface.

1   13.   The method of claim 9, wherein the average rate of transmission is reduced.

1   14.   The method of claim 13, wherein the reduction in average rate of transmission is

2   sufficient to reduce the effect that a transmission has on an other transmission in

3   the computer network.

1   15.   The method of claim 9, wherein the step of reducing the receive buffer size uses a

2   determined frequency of lost packets.

1   16.   A system for regulating an average rate of transmission on a computer network,

2   comprising:

3   a receive buffer located on a receiver; and

4   a rate control module operable to determine available space in the receive

5   buffer and to regulate a rate at which data is removed from the

6   receive buffer, such that the amount of available space in the

7   receive buffer is maintained at a regulated value.

1   17.   The system of claim 16, wherein the rate control module regulates the rate at

2   which data is removed by varying the frequency at which data is read from the

3   receive buffer.

1   18.   The system of claim 16, wherein the rate control module regulates the rate at

2   which data is removed by varying the amount of data read during each read from

3   the receive buffer.

1   19.   The system of claim 16, wherein the rate control module operates above a TCP

2   layer and communicates with the TCP layer via a standard TCP application

3   programming interface.

1   20.   The system of claim 19, wherein the rate control module operates between the

2   TCP layer and an FTP/HTTP layer.

1   21.   The system of claim 19, wherein the rate control module is integrated into a

2   FTP/HTTP layer.

1   22.   The system of claim 16, wherein the average rate of transmission is reduced.

1   23.   The system of claim 22, wherein the reduction in average rate of transmission is

2   sufficient to reduce the effect that a transmission has on another transmission.

1   24.   The system of claim 16, wherein the regulation of a rate at which data is removed

2   is a function of a determined frequency of lost packets.

1   25.   A system for transmitting data over a computer network employing TCP,

2   comprising:

3   a sender;

4   a receiver;

5   a receive buffer located on the receiver; and

6   a rate control module configured to regulate an amount of space available

7   in the receive buffer to influence an average rate that data is

8   transferred from the sender to the receiver.

1   26.   The system of claim 25, wherein the rate control module regulates the amount of

2   space available in the receive buffer by varying the frequency at which data is

3   read from the receive buffer.

1   27.   The system of claim 25, wherein the rate control module regulates the amount of

2   space available in the receive buffer by varying the amount of data read during

3   each read from the receive buffer.

1   28.   The system of claim 25, wherein the rate control module operates above a TCP

2   layer and communicates with the TCP layer via a standard TCP application

3   programming interface.

1   29.   The system of claim 28, wherein the rate control module operates between the

2   TCP layer and an FTP/HTTP layer

1   30.   The system of claim 28, wherein the rate control module is integrated into a

2   FTP/HTTP layer.

1   31.   The system of claim 25, wherein the average rate of transmission is reduced.

17

1   32. The system of claim 31, wherein the reduction in average rate of transmission is
2   sufficient to reduce the effect that a transmission has on an other transmission.

1   33. The system of claim 25, wherein the rate control module regulates the amount of
2   space using a determined frequency of lost packets.

1   34. The system of claim 25, further comprising at least a transfer manager regulating
2   communication between the sender and the receiver.

1   35. The system of claim 34, wherein the transfer manager includes at least a
2   schedule/priority manager.